SB761
U7N6
no. 73-23a
(rev.)

INSECT DISEASE REPORT

USDA FOREST SERVICE/NORTHERN REGION

Report No. 73-23a
(revised)

5200
September 1973

STATUS OF DOUGLAS-FIR TUSSOCK MOTH INFESTATIONS IN THE NORTHERN REGION, 1973

by

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INTRODUCTION

Outbreaks of the Douglas-fir tussock moth, *Orgyia (=Hemerocampa) pseudotsugata* McD., occur periodically in the Northern Region. The last outbreak subsided from natural causes in 1965. The insect was not detected again until 1970 when ornamental spruce were defoliated in Spokane, Washington, and Polson and Missoula, Montana (Tunnock 1972).

By 1972, two forested areas harbored increasing infestations. About 300 acres of Douglas-fir were defoliated south of Kettle Falls, Washington, and egg masses were abundant in a 100-acre logging area on Charles Butte, St. Joe National Forest, Idaho (Tunnock 1972).

Based on the discovery of Douglas-fir tussock moth populations at Charles Butte, it was decided to make an intensive evaluation survey for egg masses in general areas of north Idaho having a history of being epidemic centers in previous outbreaks. This was done in February 1973 to alert land owners of possible defoliation that summer. Defoliation was predicted for approximately 50,000 acres in four forested areas of Benewah and Latah Counties, Idaho (Livingston and Tunnock 1973).

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EXPERIMENT STATION

INFESTATION STATUS DURING SUMMER 1973

Aerial surveys were made during July and August to detect defoliation caused by the Douglas-fir tussock moth throughout the Northern Region. These surveys revealed a total of 127,050 acres of aerially visible damage attributable to Douglas-fir tussock moth (table 1).

Table 1.--Defoliation by Douglas-fir tussock moth in the Northern Region--1973

Area	Acres of aerially visible defoliation
Washington	
Private lands along Columbia River	5,200
Idaho	
Coeur d'Alene National Forest	1,800
Adjoining State and private lands	80
St. Joe National Forest	20,000
Adjoining State and private lands	50,000
State and private lands north of Orofino	120
Private lands south of Lewiston	4,000
Nezperce National Forest	23,000
Montana	
Lolo National Forest	50
Adjoining State and private lands	300
Northern Region total	104,550

In Idaho defoliation was centered in Benewah and Latah Counties where 70,000 acres of grand fir and Douglas-fir forests were damaged. Infestation boundaries roughly conform to the same areas damaged during the 1945-47 and 1962-65 outbreaks. Infested areas included portions of the Colville, Coeur d'Alene, St. Joe, Nezperce, and Lolo National Forests, and adjoining State and private lands (figs. 1-6).

Tussock moth damage is showing up in two quite separate ways in the Region. Most of the outbreaks are of a general nature where partial defoliation of varying intensities occurs over entire hillsides or stands. This type of injury seems to be associated with stands composed predominantly of grand fir. The other type of injury is of a more localized nature. The outbreaks on the Salmon River District, Nezperce National Forest, and on the Lolo National Forest are of this nature. Clusters of trees within a stand, varying from about one-half acre to 50 acres in size, are heavily defoliated. Most host trees within the perimeter of these plots are nearly completely defoliated and significant mortality has occurred. These spot infestations are thus far restricted to pure stands of young Douglas-fir.

FURTHER PLANS FOR 1973

Impact surveys are planned for the Palouse District of the St. Joe National Forest, Idaho, to document incidence of growth loss, top kill, and tree mortality resulting from this outbreak. A biological evaluation based on current egg masses will be made throughout the Region in October to predict potential defoliation in 1974. During February 1974, egg masses will be collected from all areas of infestation to estimate incidence of naturally occurring polyhedrosis virus which might affect larval populations in 1974. This information will be used to help select areas for pilot projects of promising biological agents or chemicals for control.

REFERENCES CITED

Livingston, R. L. and S. Tunnock, 1973. Biological evaluation of existing Douglas-fir tussock moth populations in Northern Idaho to determine damage potential for 1973. State of Idaho Department of Public Lands, Forest Pest Report No. 2, Coeur d'Alene, Idaho.

Tunnock, S., 1972. Detection survey for Douglas-fir tussock moth infestations in the Northern Region - 1972. USDA Forest Service, Division of State and Private Forestry, Report No. I-72-8, Missoula, Montana.

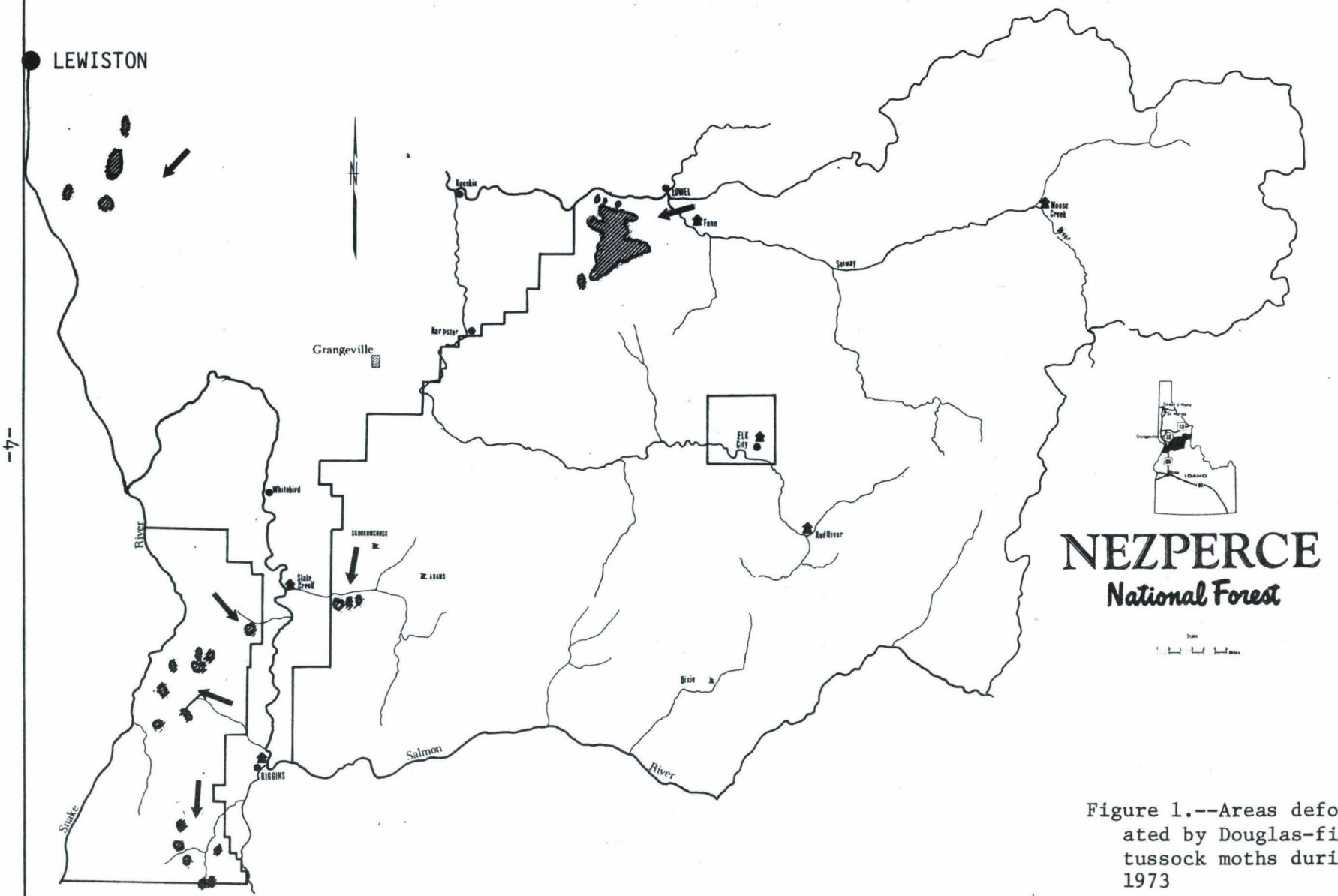

Figure 1.--Areas defoliated by Douglas-fir tussock moths during 1973

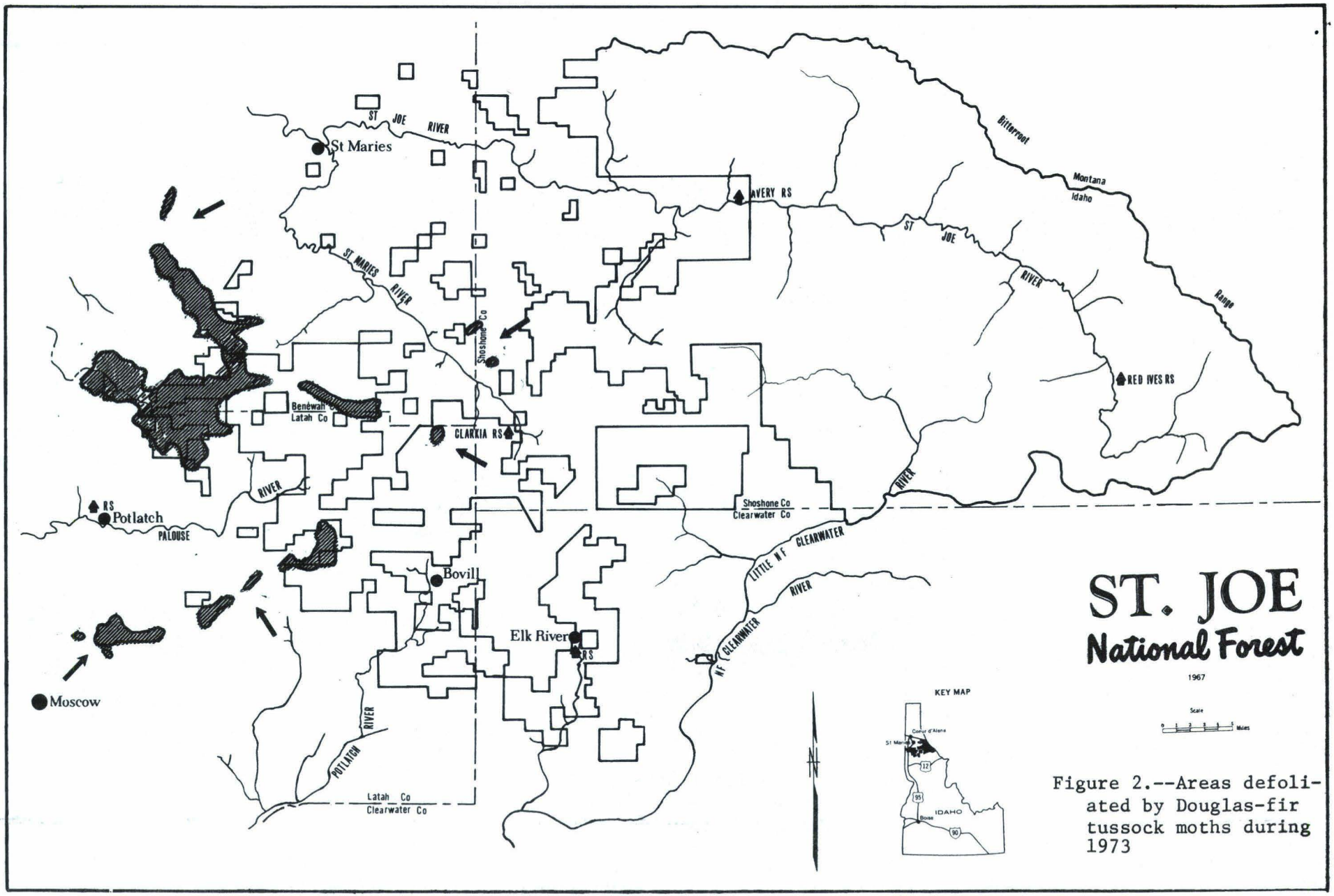

Figure 2.--Areas defoliated by Douglas-fir tussock moths during 1973

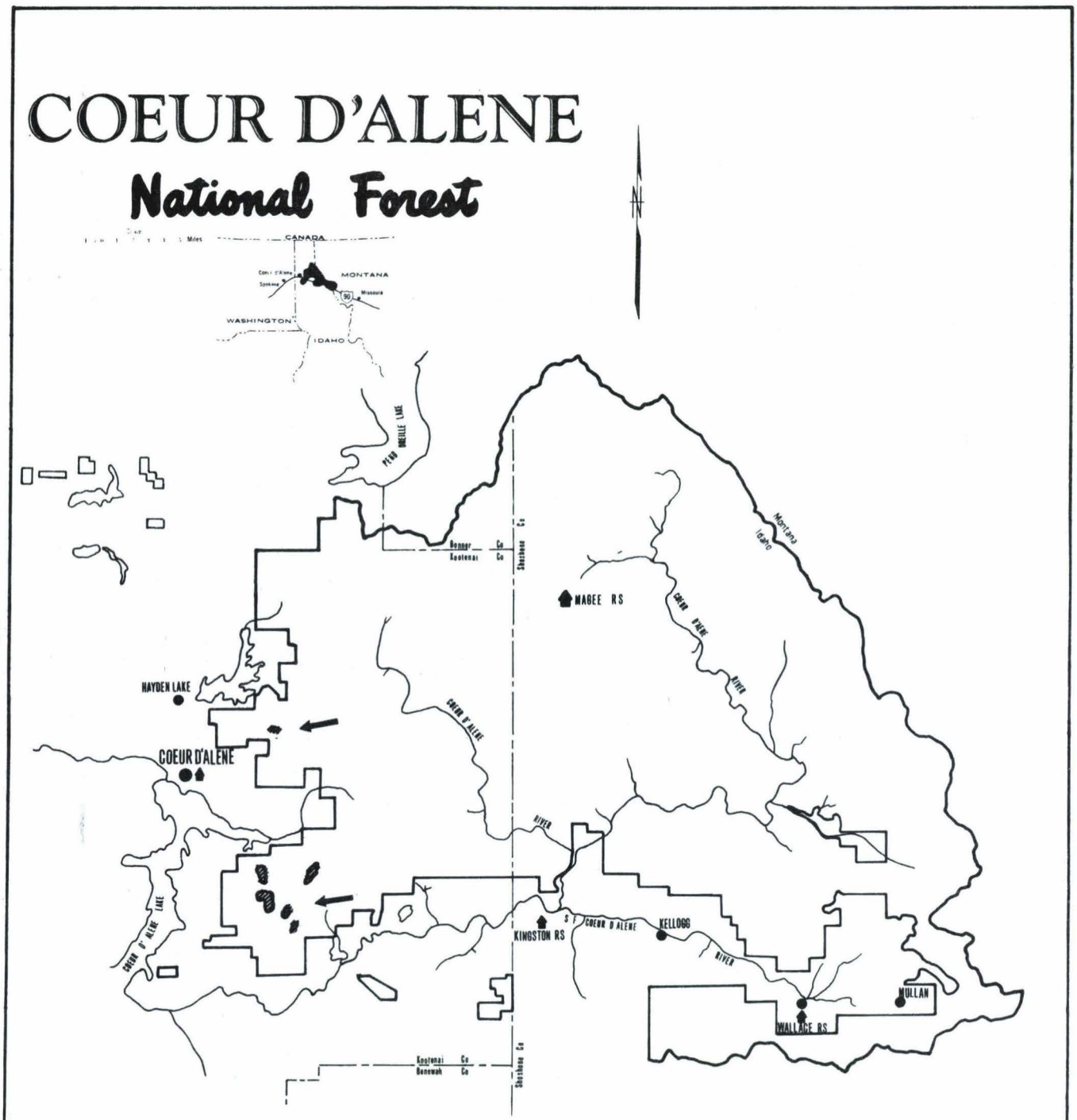

Figure 3.--Areas defoliated by Douglas-fir tussock moths during 1973

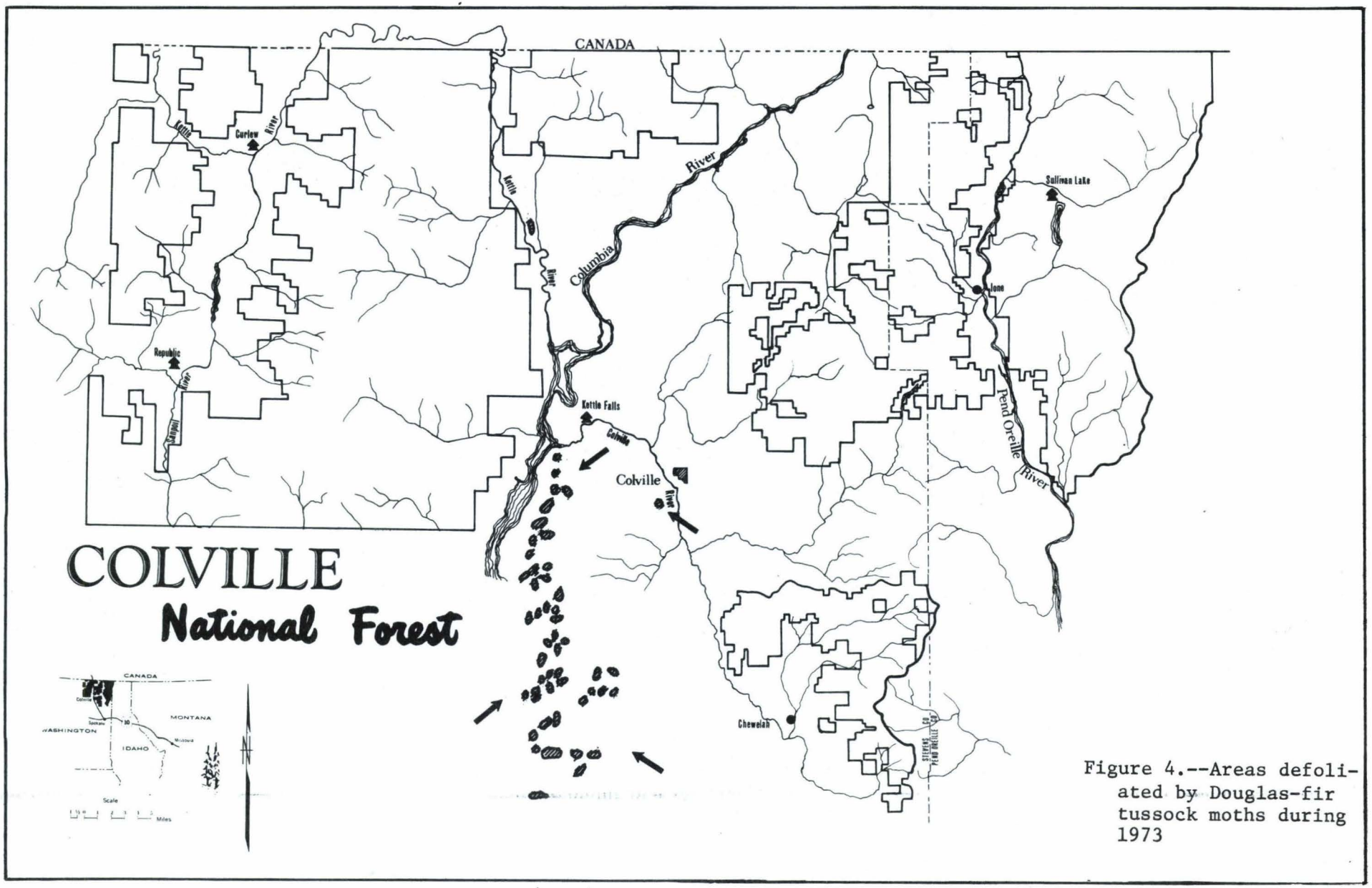

Figure 4.--Areas defoliated by Douglas-fir tussock moths during 1973

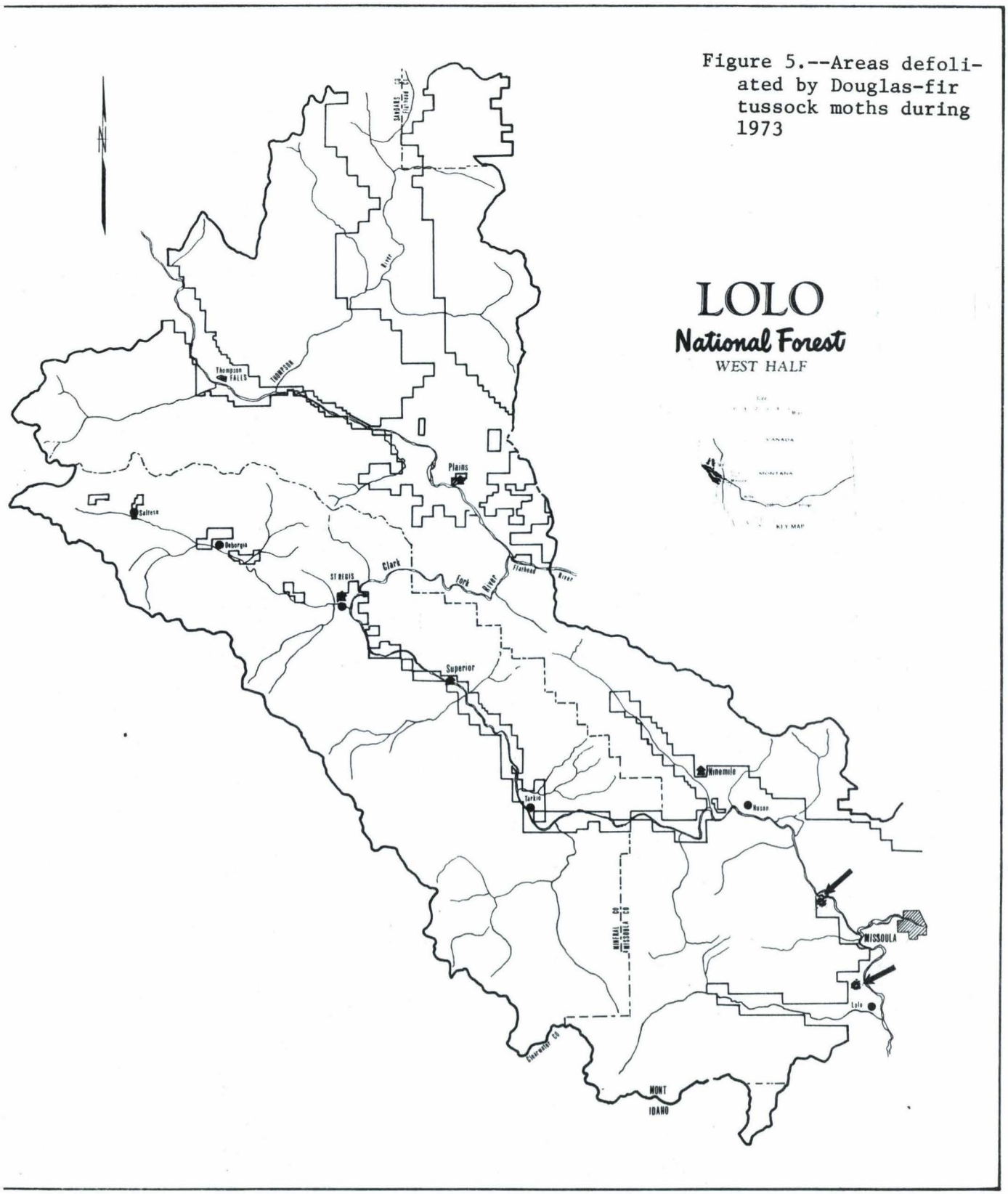

Figure 5.--Areas defoliated by Douglas-fir tussock moths during 1973

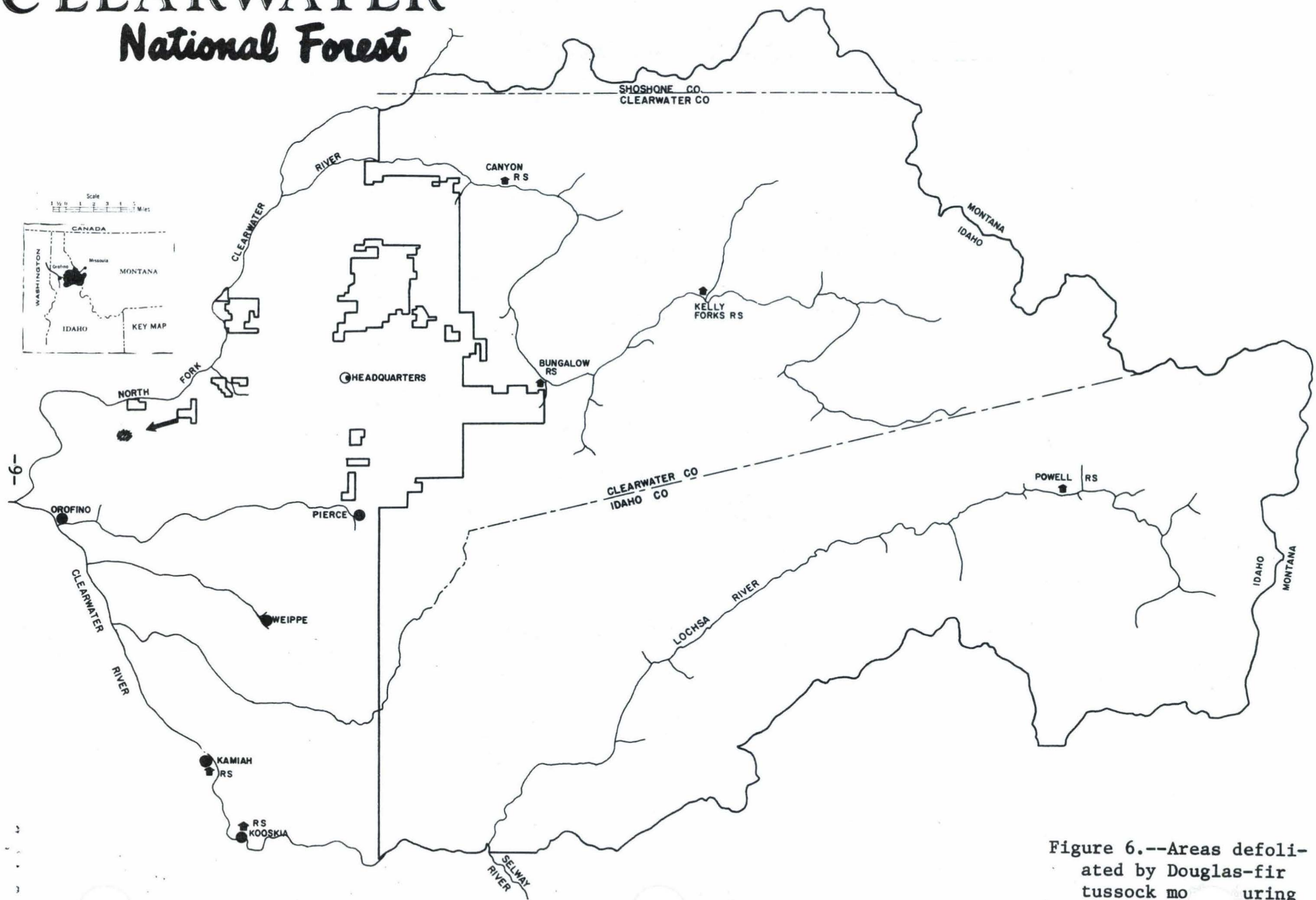

Figure 6.--Areas defoliated by Douglas-fir tussock moth during 1973